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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,930	11/13/2003	Naohiko Tsuzuki	F-8042	9884

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EXAMINER

KERNS, KEVIN P

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/712,930	Applicant(s) TSUZUKI ET AL.	
	Examiner Kevin P. Kerns	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/13/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 12i, 16i, 12r, and 16r. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 12a, 12b, and 16b (Figure 2). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because it appears as though "16o" (below "13a1") should be changed to "16r"(?) in Figure 1. Also in Figure 1, "13a2" has no arrow/pointing to any specified region of the drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the

appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: on page 7, 5th line from the bottom, "34" should be changed to 24" after "cylinder. On page 13, 3rd line, "19a" should be changed to "19". On page 14, 10th line from the bottom, "4" should be changed to "24" after "cylinder". On page 17, 7th line, "11a" should be changed to "11". Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 4,044,653) in view of Hehl (US 4,380,427).

Aoki discloses a hydraulic control apparatus for injection molding or die casting, in which the apparatus includes an injection cylinder 1 for injection of molten material into a mold cavity; a motor-driven single two-way hydraulic pump P; a hydraulic circuit that includes a series of solenoid valves to control pressure to the hydraulic fluid pipelines; and a hydraulic controller in the form of an electrical relay and timer circuit, or a combination of circuit and limit switches, being operative to control a discharge rate of the hydraulic pump (abstract; column 1, lines 11-18; column 2, lines 5-62; column 3, lines 11-68; column 4, lines 1-14; and Figures 1-4). Although Aoki does not specifically disclose a plurality of two-way hydraulic pumps, one of ordinary skill in the art would have recognized that Aoki's teachings of the motor-driven single two-way hydraulic pump, in combination with the hydraulic circuit that includes a series of solenoid valves

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to control pressure to the hydraulic fluid pipelines, would readily be modified to serve as a substantial equivalent to a plurality of two-way hydraulic pumps, as pressure is controlled in various localized regions via the valve system, thus more accurately controlling the pressure of the hydraulic fluid in the hydraulic cylinder and resulting in reduced defects on the surfaces of molded articles (Aoki; abstract; column 1, lines 11-18; and column 2, lines 5-46). Although Aoki discloses/suggests the details of the hydraulic system for an injection cylinder, Aoki does not disclose the use of the hydraulic system for a mold clamping cylinder.

However, Hehl discloses a compact hydraulic drive for a die closing (clamping) unit of an injection molding (die casting) machine, in which the hydraulic drive cooperates with clamping cylinders operative to accurately and rapidly close/clamp the injection molding dies shut under high pressure while using less space and hydraulic fluid (abstract; column 1, lines 8-13; column 2, lines 35-68; column 3, lines 1-46; column 4, line 8 through column 8, line 27; and Figures 1-6).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the hydraulic control system used for controlling injection, as disclosed/suggested by Aoki, by instead using the hydraulic system for mold clamping in a die closing unit of an injection molding (die casting) machine, as taught by Hehl, in order to accurately and rapidly close/clamp the injection molding dies shut under high pressure while using less space and hydraulic fluid (Hehl; abstract; column 2, lines 35-68; and column 3, lines 1-46).

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 4,044,653) in view of Hehl (US 4,380,427) as applied to claims 1 and 2 above, and further in view of Mizunaga et al. (JP 10-202354).

Aoki (in view of Hehl) disclose/suggest the elements of claims 1 and 2 above. Neither Aoki nor Hehl discloses that the two-way hydraulic pumps are servomotors.

However, Mizunaga et al. disclose an injection control method and device in a die casting machine, in which the device includes a servomotor 21 having controlled speed and torque variation, such that injection of the molten material is accurately controlled, resulting in a uniform, stable formed product (abstract; and Figures 1-4).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the hydraulic control system used for controlling injection, as disclosed/suggested by Aoki, by instead using the hydraulic system for mold clamping in a die closing unit of an injection molding (die casting) machine, as taught by Hehl, in order to accurately and rapidly close/clamp the injection molding dies shut under high pressure while using less space and hydraulic fluid, and by further using one or more servomotors, as taught by Mizunaga et al., in order to accurately control injection of the molten material, resulting in a uniform, stable formed product (Mizunaga et al.; abstract).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571)

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272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 10/27/04*
Examiner
Art Unit 1725

KPK
kpk
October 27, 2004